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The Interdisciplinary Nature of Concussion in Sport: Legal, Medical and Ethical Considerations

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Concussion in sport is a topic that has been discussed and analysed from a range of perspectives, and through a variety of lenses. The media spotlight has shone intensely on the legal issues arising from sports-related concussion, particularly in the United States of America with the litigation against the National Football League in 2011. Recently, two other governing bodies have been sued with class-action claims against the National Hockey League, in late 2013 and in 2014, against FIFA for concussion in youth soccer. Commentators in the United States suggest that the issue has now reached saturation point. However, the litigation has brought about changes in the way sports-related concussion is viewed and ensured that the issue is now, or should be, high on the agenda for sports governing bodies.

The United States' concussion litigation has focused on the complex legal issues arising in contact and collision sport, but has also led to heightened awareness of potential underlying concerns in concussion-management, beyond the law. A review of the literature identifies the topic as being a medical issue, a legal issue, a regulatory and governance issue, a bioethical issue, a social and cultural issue and a biomechanical issue. Researchers from these disciplines have published widely on this topic. However, the majority of these publications draw from distinct disciplinary perspectives, applying discipline-specific knowledge, and offering partial solutions or conclusions that respect and obey neat disciplinary lines.

This paper will first provide an overview of the issue of sports-related concussion, with a focus on elite football in Australia and New Zealand. By viewing this topic in a broader interdisciplinary way, an opportunity exists to collaborate across disciplines to examine, understand and manage sports-related concussion as a phenomenon that does not belong solely to a unitary disciplinary group. Rather, this approach could identify the multiple perspectives drawing from medical, legal and ethical dimensions. By adopting a multi-focal view of sports-related concussion, conversations and connections may lead to alternative interpretations of findings and solutions that transcend a single discipline and contribute to more sustainable outcomes for a broader range of stakeholders.

Key Words: Sports-related Concussion, football injury, negligence, sport litigation

I INTRODUCTION

*'I think as a footballer, you expect to have knocks... you expect maybe to have arthritis later on in years. You do not expect to die of brain damage aged 59.'*¹

Sports-related concussion is an important and complex issue, but it is not a new phenomenon.² The interference with the physical integrity of the participant involved in contact and collision sports and risks associated with mismanaging injuries, particularly return-to-play or practice decisions, are reoccurring themes across sport, across jurisdictions and disciplines.³ However, in recent times, the growth and intensity of public awareness of sports-related concussion—fuelled by litigation, concussion-related deaths and links to long-term degenerative brain disease—raise questions about the adequacy of the decisions made by rule-makers, involving an analysis of their roles, responsibilities and risk assessments.

Key issues concern whether sports governing bodies' have taken reasonable care over the years to protect and enhance the safety of participants in their sport, and whether their concussion protocols reflected the state of medical art and scientific knowledge in sports medicine at the relevant time. From a regulatory perspective, questions arise concerning the implementation and enforcement of the protocols, with appropriate and consistent sanctions for non-compliance. From an ethical perspective, whether, as custodian of the sport, the governing body has an obligation to invest in research and education of participants across the relevant constituency.

This paper will provide an overview of the issue of sports-related concussion with a particular emphasis on elite football in Australia and New Zealand and the role of the governing body rule-maker and custodian of the game.⁴ The first part will outline the clinical background of sports-related concussion, its symptoms and sequelae with an overview of the evolving state of medical art and scientific knowledge.

The second part examines the legal vulnerabilities arising from the concussion litigation commenced in the United States against the National Football League (NFL), the National Hockey League (NHL) and *Fédération Internationale de Football Association* (FIFA), alleging mismanagement of the handling of sports-related concussion. These claims, as yet unproven, identify the infringement of private rights of individual participants and sharpen the focus on acts or omissions of the governing body.

The third part of this paper will consider the ethical dimensions and the wider social context of sports-related concussion beyond the private rights of professional players. This part explores the impact on society, including the public interest in sports-related concussion and the role of the governing body as custodian of the game. Recent examples of concussed players being permitted to return to the field of play and the 'playing through pain' heroics in

¹ Dawn Astle, daughter of late Jeff Astle, former England and West Bromwich Albion soccer player, died aged 59

² Meehan and Bachur trace early forms of sports-related concussion to 776BC in sports of wrestling and fist-fighting. See William P. Meehan and Richard G. Bachur, 'Sports-Related Concussion' (2009) 123(1) *Paediatrics* 114.

³ For discussions on sports-related injuries generally, see, Harold Luntz, 'Compensation for Injuries Due to Sport' (1980) 54 *Australian Law Journal* 588. Regarding liabilities of sport supervisors, see G.M Kelly, 'Prospective Liability of Sport Supervisors' (1989) 63 *Australian Law Journal* 669. For an earlier perspective on the allocation of risk and legal responsibility for sporting injuries in professional sport in the United States see Matthew J. Mitten, 'Team Physicians and Competitive Athletes: Allocating Legal Responsibility for Athletic Injuries' (1993-1994) *University of Pittsburgh Law Review* 129.

⁴ Australian Football, rugby league, rugby union and association football (soccer) (the 'four codes') are played at the elite level in national and international competitions.

finals competition can send confusing signals about the seriousness of the harm and the potential risks associated with concussion.⁵

This final part of this paper will seek to expand Doherty's observation that sports-related concussion is a topic well suited for interdisciplinary collaboration.⁶ By applying these principles to sports-related concussion, opportunities are created for conversations and connections that transcend disciplinary lines and offer more sustainable outcomes to a broader range of stakeholders.

II MEDICAL CONSIDERATIONS

Since 776 BC athletes have participated in sports that exposed them to risks of concussion.⁷ Symptoms associated with concussion can be traced to the time of Hippocrates. However, it was not until the 20th century when scientific studies began investigating the effects of these symptoms. The first studies of concussion in a sporting context evolved from the early studies of boxers in the 1920s that identified possible neurological effects of repetitive head trauma and later described as 'dementia pugilistica' literally meaning 'dementia of a fighter'.⁸ Doctor Harrison Martland, pathologist, conducted post-mortem examinations in 23 cases and discovered neurological lesions in the brains of boxers and he is noted as having discovered 'Punch Drunk Syndrome' in 1928. Between late 1930s and the late 1940s, with the growing recognition that this syndrome could be associated with other sports, the term Progressive Traumatic Encephalopathy became the preferred term, leading to what is now described as Chronic Traumatic Encephalopathy (CTE), a disease outlined later in this paper.⁹

In contemporary times, sports-related concussion, particularly in contact and collision sports, has become a common occurrence and commonly recognised as an inherent risk associated with participation.¹⁰ Based on Magnusson's and Opie's classification system, the codes of Australian Football, rugby league and rugby union are classified as contact sports, with a primary object to score goals or tries.¹¹ In the pursuit of this primary object, physical contact

⁵ A recent survey of 1000 children aged between 11-16 found more than half admire professional players as tough for playing on when injured, with 23% believing a pulled muscle is more serious than a head injury. Mark Ellis, 'Footballing youngsters at risk for playing on through injury like their heroes', *Mirror* (online), 2 October 2014 <<http://www.mirror.co.uk/sport/football/news/footballing-youngsters-risk-playing-through-4362724>>. See also commentary by Steve Mascord in the Sydney Morning Herald arguing that community standards currently regard the recent example of Sam Burgess in the Souths v Bulldogs final as heroic not irresponsible: Steve Mascord, 'Sam Burgess' Injury: Why is Playing On Allowed?' *Sydney Morning Herald* (Sydney), 9 October 2014.

⁶ See Alison Doherty, "'It Takes a Village:" Interdisciplinary Research for Sport Management' (2012) 26 *Journal of Sport Management* 1,4.

⁷ William P. Meehan and Richard G. Bachur, 'Sports-Related Concussion' (2009) 123(1) *Paediatrics* 114, referring to Echemendia.

⁸ Harrison S. Martland, 'Punch Drunk' (1928) 19 *Journal of the American Medical Association* 1103-1107. Doctor Harrison Martland was a New Jersey pathologist who described clinical aspects of a progressive neurological deterioration that occurred after repetitive brain trauma in boxers. See also JF Geddes, 'Neuropathology' (1996) 22 *Applied Neurobiology* 12. Reference to Martland's research can be seen in Alzheimer's Australia, New South Wales, Report on football and head injuries. See Kylie Sait, 'Football, Head Injuries and the Risk of Dementia' (March 2013) 7 (Alzheimer's Australia, New South Wales, Report).

⁹ CTE was first discovered in boxers, jockeys and wrestlers who sustained multiple blows to the head. See Robert Cantu, 'Chronic Traumatic Encephalopathy in the National Football League Play' (2007) 61 *Neurosurgery* 223, 224. Also, see Ann McKee et al, 'The spectrum of disease in chronic traumatic encephalopathy' (2013) 136 *Brain - A Journal of Neurology* 43, 44.

¹⁰ Recent Australian football injury surveillance data estimates the number of reported concussions to be 6 to 7 per team per year. As at 2014, there were 18 teams competing in the national competition, therefore based on previous years, the expected number of reported concussions will be between 108-126. The lack of a data surrounding sports-related concussion in other levels of football makes it difficult to estimate the number of injuries at the other levels.

¹¹ Roger Magnusson and Hayden Opie, 'HIV and Hepatitis in Sport: A Legal Framework for Resolving Hard Cases' (1994) 20(2) *Monash University Law Review* 214, 222. See also *R v Donovan* [1934] 2 KB 498, referred to in *R v Brown* (1992) CA 302 describing contact sports as the mid-point between fighting and the milder sports.

between participants is permitted and occurs continuously at a high impact and often at an aggressive level throughout the game. Soccer, on the other hand, is classified as a collision sport where direct physical contact between players is not permitted, but concussion is still an inherent or inevitable outcome.¹² Football players in these contact and collision sports are at a high risk of sustaining concussive and sub-concussive injuries throughout their playing careers.¹³

In 1994, the Head and Neck Injury Panel of the Australian National Health and Medical Research Council (NHRMC) published a report identifying concussion as an important issue in these football codes.¹⁴ Numerous recommendations were made designed to improve the safety of participants and guidelines were published in 1995, but subsequently rescinded in 2004 for administrative reasons. The NHRMC Report also identified that concussion meant different things to different people. The challenge on settling on a universal definition continues to hamper efforts in understanding concussion some 20 years on.

A *Clinical Understandings of Sports-Related Concussion and its Sequelae*

Described as a ‘sacrosanct anatomical structure’ the brain is the epicentre of human behaviour and vitally important to the maintenance of long-term quality of life.¹⁵ Altering the brain will in turn alter a person, and assessing the true extent of this alteration of brain function, in a living patient, is not without its difficulties. These challenges, including those faced by earlier researchers whose experimental subjects included monkeys, heartless frogs and mice, was the very subjective nature of symptoms, and continues to hamper an accurate diagnosis in the 21st century.¹⁶

Concussion is a brain injury caused by a direct or indirect blow to the head, face, neck or other part of the body, with an impulsive force transmitted to the head, causing the brain to ‘slosh’ inside the skull and disturbing brain function.¹⁷ Since Hippocrates, the definition of

¹² Roger Magnusson and Hayden Opie, 'HIV and Hepatitis in Sport: A Legal Framework for Resolving Hard Cases' (1994) 20(2) *Monash University Law Review* 214, 222.

¹³ Incidence rates of concussion have increased in Australian football due, in part, to the increased awareness and concussion management protocols implemented in that sport. See John Orchard, Hugh Seward and Jessica Orchard, 'Australian Football League Injury Report 2013' Australian Football League, (6 May 2014) 1, 10. The probability of concussion is estimated at approximately one in seven. See Australian Sports Commission, 'Clearinghouse for Sport, Concussion and Head Trauma' (February 2014).

¹⁴ In 1994, the NHMRC Head and Neck Injuries Panel published a report 'Head and Neck Injuries in Football' (NHMRC Report). In 1995, the NHMRC panel issued guidelines 'Head and Neck Injuries in Football' and recommended a number initiatives and guidelines due to the serious nature of concussion in football (NHMRC Guidelines). These guidelines were rescinded on 17 September 2004 and are permitted to be used only for historical purposes. The guidelines are said to no longer represent the views or carry the endorsement of the NHMRC. One suspects that the state of the science has evolved since the report was originally prepared that the guidelines for concussion management are out of date. However, the report also contains important and useful recommendations that go towards collaborative and co-ordinated approaches to data collection (a national registry of brain injury), severe penalties for illegal conduct causing injuries, and a central fund for specific research into prevention and management of head and neck injuries. See National Health and Medical Research Council, 'Head and Neck Injuries in Football: Guidelines for prevention and management' (National Health and Medical Research Council, 1994).

¹⁵ Gardner referring to Bauman and Johnson. See Andrew Gardner, 'The Complex Clinical Issues Involved in an Athlete's Decision to retire from Collision Sport Due to Multiple Concussions: A Case Study of a Professional Athlete' (2013) 4(141) *Frontiers in Neurology* 6.

¹⁶ Pundenz and Shelden (1946), Witkowski cited in Charles Symonds, 'Concussion and its Sequelae' (1962) (6 January 1962) *The Lancet* 1,2. See also Matthew Dashnaw, Anthony Petraglia and Julian Bailes, 'An Overview of the Basic Science of Concussion and Subconcussion: Where we are and where we are going' (2012) 33(6) *Neurosurgery Focus* 9, 2 referring to experiments on nonhuman primate models. Gardner refers to these challenges in the 21st Century. See Andrew Gardner, 'The complex clinical issues involved in an athlete's decision to retire from collision sport due to multiple concussions: a case study of a professional athlete' (2013) 4(141) *Frontiers in Neurology* 6

¹⁷ 4th Consensus Statement, is adopted in part in Alzheimer's Australia, New South Wales, Report 7.

concussion has continued to evolve, aligning with scientific discoveries and technological advances in diagnostic methods. However, despite these advances, there remains no universally accepted agreement on a standard definition of concussion, thus presenting a number of challenges and limitations in this field of study.¹⁸ Risks associated with the effects of sub-concussive injuries—blows to the head that do not meet the threshold for diagnosis as a concussion—are not fully understood.¹⁹ For the purpose of this paper, the term ‘concussion’ means concussive and sub-concussive head trauma.

A football player who has sustained a concussive or sub-concussive injury is thought to be at a greater risk of sustaining another injury if returned to play or practice before asymptomatic. Despite the evolving state of epidemiological certainty and developments in scientific knowledge, consensus exists in the medical literature that advocates for conservative concussion management as critical to ensure that a player is not further exposed to brain trauma whilst being in an ‘injury-induced vulnerable state.’²⁰ Within a professional sporting environment, the luxury of time to allow the brain to recover fully is constrained by sheer intensity and pressures within the competitive sporting environment, largely fuelled by performance-driven motivations and incentives of those participating in the competition. It is these dynamics that features prominently in terms of risk evaluation, assessment and assumption.

B *Moving towards Consensus*

Collaboration across a number of international sporting federations and medical experts with an interest in sports-related concussion first occurred in 2001 with the convening of the inaugural Concussion Conference in Vienna and the establishment of the Concussion in Sport Group (CISG).²¹ One of the aims of this conference was to provide recommendations to improve athletes’ safety for those who suffer concussive injuries in sports such as, ice hockey, football and other high impact sports.²² Since 2001, three other symposia have been convened, and revised the Consensus Statements issued by the CISG. This revision was reflective of the evolving state of medical art and scientific knowledge. In 2012, the 4th International Conference of Concussion in Sport described injury constructs to include the rapid onset of short-lived impairment of neurological function that usually resolves spontaneously, but may evolve, and a graded set of clinical symptoms that may or may not involve loss of consciousness, some of which may be prolonged.²³

C *Consequences*

The latent nature of concussion and the subjective elements of its sequelae contribute greatly to the difficulties and complexities associated with measuring the nature and scope of the risks it presents. One of the areas of complexity is the plethora of symptoms and variability of

¹⁸ Paul McCrory, 'What's in a name?' (2001) 35 *British Journal of Sports Medicine* 285, responding to the confusion when concussion is described as a mild traumatic brain injury.

¹⁹ Matthew Dashnaw, Anthony Petraglia and Julian Bailes, 'An Overview of the Basic Science of Concussion and Subconcussion: Where we are and where we are going' (2012) 33(6) (December 2012) *Neurosurg Focus* 9.

²⁰ Edward Wojtyś, et al, 'Concussion in Sports' (1999) 27(5) *American Journal of Sports Medicine* 676, 677.

²¹ The symposium was organised by the governing body of contact sports of ice hockey, International Ice Hockey Federation and the governing body of collision sport, association football (soccer), the Federation Internationale de Football Association Medical Assessment and Research Centre (FIFA, F-MARC).

²² M. Aubry, et al, 'Summary and agreement statement of the first International Conference on Concussion in Sport, Vienna 2001' (2002) 36(1) *British Journal of Sports Medicine* 6.

²³ Paul McCrory, et al, 'Consensus Statement on Concussion in Sport: The 4th International Conference on Concussion in Sport held in Zurich, November 2012' (2013) 47(5) (Apr) *British Journal of Sports Medicine* 250, 251. (Consensus Statement).

the presentation of these symptoms. The symptoms that present in the first few minutes can be different to those, which present in an hour, 6 hours and beyond.²⁴ However, each case is different owing to evolving and variable range of symptoms and sequelae.

Symptoms in 80 to 90 per cent of adult patients resolve in a short period, estimated to be between seven to ten days—if managed properly.²⁵ The more complex cases are those where symptoms continue beyond this time frame. However, if concussion is not managed properly, there is a greater risk of further injury or serious damage due to the brain being in an ‘injury-induced vulnerable state’.²⁶ It is this vulnerability that supports the requirement for physical and cognitive rest until the patient is asymptomatic.²⁷ Currently there is no diagnostic method or tool that can determine when a patient is asymptomatic as there is no visible marker on either a routine MRI or CT Scan.²⁸ The nature, extent and scope of this long-term risk is an area that has polarised views in the scientific research community.

D CTE and Concussion

‘... CTE is caused by repetitive brain trauma...the number or type of hits to the head needed to trigger degenerative changes is unknown...it is likely that other factors, such as genetics, may play a role in the development of CTE, as not everyone with a history of repeated brain trauma develops this disease. However, these other factors are not yet understood.’²⁹

Perhaps one of the most contentious issues in the medical literature about sports-related concussion involves the nature and extent of the association between repetitive concussive and sub-concussive injuries and CTE. As previously indicated, what is now known as CTE was first discovered in 1928 in boxers. CTE is a progressive and degenerative disease of the brain. This disease has been linked to those with a history of repetitive concussion, triggering progressive degeneration of the brain tissue, leading to the build-up of abnormal tau protein. This brain degeneration is said to be associated with memory loss, confusion, impaired judgment, paranoia, impulse control problems, aggression, depression and, eventually, progressive dementia, graded according to stages I to IV.³⁰

Over the past decade, public awareness of CTE has heightened following reports, in the United States, where medical research has associated CTE with American football and, subsequently class action litigation involving retired players and the National Football League (NFL) has ensued. At the 2009 Congressional Hearing on NFL Player Head Injuries, the director of the Centre for the Study of Traumatic Encephalopathy, Boston University (CTE Centre), Doctor Ann McKee, provided evidence about the nature of this association between CTE and concussion in American football.³¹ Doctor McKee’s evidence included references to 11 cases involving professional and college footballers, all of which exhibited clear evidence of CTE. Her testimony, further highlighted the extent of the issue, that during her 23

²⁴ Winne Meewissee, University of Calgary, British Journal of Sports Medicine, Podcasts on Concussion, (accessed November 2013) < <https://soundcloud.com/bmjpodcasts/professor-winne-meeuwisse-on>>.

²⁵ 4th Consensus Statement, 2.

²⁶ Edward Wojtys, et al, 'Concussion in Sports' (1999) 27(5) *American Journal of Sports Medicine* 676, 677.

²⁷ Ibid.

²⁸ The use of functional MRI scans can detect chemical changes in the brain but these are not currently part of the routine assessment at the present time. PET scans are at the early states of development. See 4th Consensus, 2.

²⁹ The answer to the questions, ‘How you get CTE? Can I get CTE from one concussion/hit to the head? See Frequently Asked Questions, CTE Centre, Boston University, have provided these answers <<http://www.bu.edu/cte/about/frequently-asked-questions/>>.

³⁰ Sports Legacy Institute, Chronic Traumatic Encephalopathy (2011), Centre for the Study of Traumatic Encephalopathy, Boston University <<http://www.sportslegacy.org/index.php/cte-and-concussions/what-is-cte>>.

³¹ See House of Representatives Committee on the Judiciary, Government of the United States of America (111th Congress), Hearings on the Legal Issues Relating to Football Head Injuries (Part I & II) (28 October 2009 and 4 January 2010).

year career, she had examined over ‘1000’s brains’ from all ages, walks of life, and she concluded that she had ‘only seen this unique pattern with individuals with repetitive head trauma from football and boxing.’³²

According to a recent study, 34 out of 35 former professional American football players had shown clear evidence of CTE.³³ In February 2014, the first Australian case was reported by the CTE Centre with the diagnosis of evidence of CTE in the post mortem examination of a 79 year old former rugby union player.³⁴ The CISG in the 4th Consensus Statement indicated that the ‘cause and effect relationship’ had not been demonstrated between CTE and concussions or exposure to contact sport. The CISG also observed that ‘the *speculation* that repeated concussion or sub-concussive impact causes CTE remains unproven’ (my emphasis added).³⁵ In essence, there are significant differences of opinion regarding the association between the cumulative effects of sports-related concussion and CTE. Coupled with the complexities already associated with the lack of a universally accepted definition, sports-related concussion has the hallmark features of a ‘wicked problem’ drawing from a range of perspectives.³⁶

In Australia, a number of advocacy groups have expressed concerns about sports-related concussion. In 2013, Alzheimer’s Australia, New South Wales, issued a report entitled, ‘*Football, Head Injuries and the Risk of Dementia*’. This report described concussion in football as ‘worrying’, and added that cognitive changes were among the ‘most common, long-lasting and most disabling symptoms’ resulting directly from concussions. Further, this report described that these changes in a brain can affect a person’s ability to learn, remember new information, the capacity to pay attention, organise thoughts, plan and make sound judgements.³⁷ The involvement of Alzheimer’s Australia, New South Wales, demonstrates with clarity the wider societal implications of sports-related concussion and, coupled with the earlier report from Brain Injury Australia in 2012, there is support for a broader public perspective on the significance of this problem.³⁸ Additionally, these reports raise concerns about the risks associated with potential long-term neurological and cognitive decline and sports-related concussion. Further, according to actuarial data released in the United States of America, 14 per cent of NFL players will develop Alzheimer’s disease and 14 per cent will develop moderate dementia across their lifetime.³⁹

E *State of the Science*

There is little doubt that sports-related concussion is a complicated issue. Despite the polarised views in the scientific community and the evolving state of scientific development, litigation lawyers in the United States were satisfied that there was sufficient scientific evidence to commence legal proceedings against the NFL, with the first claim filed against

³³ Ann C. McKee, et al, ‘The Spectrum of Disease in Chronic Traumatic Encephalopathy’ (2013) 136 *Brain - A Journal of Neurology* 43,50.

³⁴ ‘Brian Disease CTE Found in Former Manly Player Barry Taylor’, *The Courier Mail* (online), 28 February 2014 <<http://www.couriermail.com.au/sport/rugby/brain-disease-cte-found-in-former-manly-rugby-player-barry-taylor/story-fnii0ksb-1226840201898>>.

³⁵ Paul McCrory, et al, ‘Consensus Statement on Concussion in Sport: The 4th International Conference on Concussion in Sport held in Zurich, November 2012’ (2013) 47(5) *British Journal of Sports Medicine* 250, 258.

³⁶ Arie Freiberg, *The Tools of Regulation* (Federation Press, 2010); Annette Greenhow and Jocelyn East, ‘Custodians of the Game: Ethical Considerations for Football Governing Bodies in Regulating Concussion Management’ (2014) *Neuroethics*.

³⁷ Alzheimer’s Australia, New South Wales, Report referring to traumatic brain injury (TBI).

³⁸ Nick Rushworth, ‘Policy Paper: Concussion in Sport’ (Brain Injury Australia, October 2012).

³⁹ Dan Diamond, ‘NFL Players Have 30% Chance of Alzheimer’s or Dementia, New NFL Concussion Data Suggest’ *Forbes* (online), 9 September 2014 <<http://www.forbes.com/sites/dandiamond/2014/09/12/nfl-players-have-30-chance-of-alzheimers-or-dementia-new-nfl-concussion-data-suggests/>>.

the governing body in July 2011 (NFL Litigation). Dismissed at the time as idiosyncratic of the ‘compensation culture’ in the United States, upon reflection the proceedings were perhaps just the tip of the iceberg.⁴⁰

III LEGAL DIMENSIONS TO SPORTS-RELATED CONCUSSION

‘I think there’s been a perception that the non-helmeted sports are somehow less likely or less prone to these kinds of diseases,’ she said.

‘There was also a time when people said C.T.E. was only an American problem. I think we are learning that, in both cases, those things aren’t true and this is a problem that is going to be seen around the world.’⁴¹

It is held that any professional football player is expected to know that there will be a risk of injury and a reasonable likelihood of being subjected to fierce, deliberate and harmful contact within the parameters of the rules of the game.⁴² Depending on the particular code and the playing position, these players are at risk of sustaining concussive and sub-concussive injuries across their professional playing careers.⁴³ However, the central focus of this paper is not on the obvious or inherent dangers associated with contact and collision sports, but rather on the legal consequences of mismanaging concussion and the latent harm to physical integrity, exposing more serious and long-lasting damage.

An Australian court is yet to test the legal vulnerabilities associated with the mismanagement of sports-related concussion. Drawing from recent litigation claims, primarily from the United States, allegations based on the tort of negligence have been made against the governing body, the national sporting organisations, the employer club, the team doctor, and school administration.⁴⁴ Insurers and the NFL have been involved in litigation over who is

⁴⁰ Greg Prichard, ‘League and American football not concussion cousins, says medic’, *The Age* (online), 17 May 2012, <<http://www.theage.com.au/rugby-league/league-news/league-and-american-football-not-concussion-cousins-says-medic-20120516-1yrbp.html>>.

⁴¹ Quote by Dr Ann McKee. See Sam Borden, ‘Soccer Star Bellini is Found to Have Had Brain Trauma’, *International New York Times* (online), 23 September 2014 <<http://www.nytimes.com/2014/09/24/sports/soccer/soccer-star-bellini-is-found-to-have-had-brain-trauma.html?ref=international&r=1>>.

⁴² Justice Callinan in *Agar* noted that rugby is notoriously dangerous sport, [127].

⁴³ Incidence rates of concussion have increased in Australian football due, in part, to the increased awareness and concussion management protocols implemented in that sport. See John Orchard, Hugh Seward and Jessica Orchard, ‘Australian Football League Injury Report 2013’ Australian Football League, (6 May 2014) 1, 10. The probability of concussion is estimated at approximately one in seven. See Australian Sports Commission, ‘Clearinghouse for Sport, Concussion and Head Trauma’ (February 2014).

⁴⁴ The National Football League, the National Hockey League and FIFA have all been sued in respect of sports-related concussion. The first claim against the NFL was filed in July 2011 in *Maxwell et al v National Football League et al*, No. BC465842 (Cal Super. Ct, 2011), with another 252 separately filed claims involving more than 4800 subsequently consolidated under a Consolidation and Transfer order dated 31 January 2012. Case Management Order No. 2, 26 April 2012 http://nflconcussionlitigation.com/?page_id=274. The NHL was sued in November 2013 (*Leeman et al v NHL et al* 1:13-cv-01856 (D DC, 2013)) and FIFA sued in August 2014. See *Mehr and ors v FIFA and ors* No.3:14-CV-03879 (Northern District Court of California, 2014). US Soccer and other national and state bodies responsible for soccer in the United States are joined as defendants in the FIFA claim. The NCAA has been sued and agreed to a US\$70million settlement. The Kansas City Chiefs, a NFL club, has been sued by former players in *Cooper et al v Kansas City Chiefs Football Club, Inc.* See Paul Anderson, ‘The Fight must go on’ NFL Concussion Litigation (3 December 2013) <<http://nflconcussionlitigation.com/?p=1548>>. An early case against a team doctor was in *Hoge v Mussel*, No 98 L 0996 (III.Lake County Court, July 5, 2000). See Hecht, Alexander, ‘Legal and Ethical Aspects of Sports-related Concussion: Merrill Hoge Story’ (2002) 12 *Seton Hall Journal of Sport Law* 17, 21. Recently, Lucas Neville sued his former school, St Michael’s College and St Vincent’s University Hospital in Dublin over mismanaging sports-related concussion in school rugby union. See Augustus Cullen Law, ‘ACL Secures €2.75 for a young man who suffered second concussion playing rugby’ (9 April 2014) <<http://www.aclsolicitors.ie/news-events/current-news/acl-secure-%E2%82%AC2.75-million-for-young-man-who-suffered-second-concussion-playing-rugby/>>.

responsible for indemnifying against the risks referred to in the NFL litigation.⁴⁵ This part of the paper will examine the allegations made against the NFL, the NHL and FIFA—albeit allegations that as yet remain unproven—in an effort to identify potential legal issues in negligence in an Australian football context.

A The NFL Litigation

The NFL concussion issues have been well documented in the past—from the early pre-litigation ‘Big Tobacco’ analogies made in Congressional Hearings, to the filing of claims initially in 2011 and the mediated settlement in August 2013. The central allegation against the NFL was that it owed, and failed to discharge, a duty of care to protect players from the hazards of head knocks and repetitive concussions during their playing careers. Further, the claim also alleged fraudulent concealment of information with inherent conflicts of interest in the way the NFL-funded scientific research was managed. The initial response from the NFL was a vehement denial of the allegations that it knew and concealed the risks associated with repetitive concussion. It was also argued by the NFL that the collective bargaining agreements governed the players during their playing careers and subsumed all rights to compensation.

1. The Pre-Congressional Hearing Phase

An early chapter in the NFL’s concussion narrative began in 2002 when Doctor Bennet Omalu, a forensic pathologist in Pittsburgh, conducted a routine autopsy on the body of deceased NFL footballer and subsequently published the paper entitled ‘*Chronic Traumatic Encephalopathy in a National Football League Player*’.⁴⁶ The response was immediate, with the NFL denying the validity of the research, dismissing the suggested link argued by Omalu and in response published the results of its own research, which concluded that in its view, there was no increased risk of repetitive concussion in football. Some suggested that the NFL embarked upon a campaign to minimise the issue, by discrediting the quality of the emerging independent research.⁴⁷ The debate that ensued polarised both the football and scientific communities. Allegations of conflict and competing interests were arguments also made.

The body of scientific evidence amassing and media applying the moniker ‘a concussion crisis,’ it took a 2009/2010 Congressional Hearing for the NFL to undertake significant reform. These reform steps involved rule changes that were aimed to make the game safer, development of mandatory return-to-play directives and a strong commitment to fund more research into this serious issue. The NFL, after detailed public examination at this Congressional Hearing, was heavily criticised for failing to regulate its sport, for and in the best interests of its players and the public.⁴⁸

⁴⁵ See for example, *TIG Insurance Co. v National Hockey League*, 651162/2014, New York State Supreme Court, New York County (Manhattan). Chris Dolmetsch, ‘NHL Sued by Insurer Over Defense of Concussion Lawsuits’, *Bloomberg* (online), 16 April 2014 <<http://www.bloomberg.com/news/print/2014-04-16/nhl-sued-by-insurer-over-defense-of-concussion-lawsuits-1-.html>>.

⁴⁶ Bennet J. Omalu, et al., ‘Chronic Traumatic Encephalopathy in a National Football League Player’ (2005) 57(1) *Neurosurgery* 128

⁴⁷ Jennifer Heiner. ‘Concussion in the National Football League: Jani v. Bert Bell/Pete Rozelle NFL Player Ret. Plan and a Legal Analysis of the NFL’s 2007 Concussion Management Guidelines’ (2008) 18 *Seton Hall Journal Sports and Entertainment Law*, 255.

⁴⁸ House of Representatives 111th Congress. 2009, 2010. Legal Issues Relating to Football Head Injuries (Parts I and II): Hearing Before the H. Comm. on the Judiciary, 111th Cong. Congressional Record, 28 October 2009 and 4 January 2010. (*Congressional Hearing*).

2. The Litigation Phase

Following this Congressional Hearing, litigation was commenced against the NFL, with the first claim filed in July 2011 that involved 75 retired NFL players. Within a relatively short period of time, 252 separate complaints were filed against the NFL that represented over 4800 NFL players. The common allegation made by the complainants was that the NFL owed a duty of care to protect its players, to inform, educate and warn players about the possible links to CTE.⁴⁹ These allegations were based on the NFL's primary role as rule-maker in the sport of American football.

The NFL litigation also alleged that these factors resulted in the NFL exerting significant influence over those involved in this sport including doctors, trainers, coaches and players.⁵⁰ Another issue raised by the complaints was the involvement and the role of a team's doctors, and a close examination of what was done to warn the players about the health risks associated with multiple concussions. The complex matrix of facts required a retrospective analysis of the practices in previous generations and expert evidence addressing the state of medical research at the relevant times.⁵¹

3. A Change of Attitude

Following these Congressional Hearing, and perhaps influenced by the concussion litigation itself, the NFL have taken positive steps by engaging in open self-regulation, permeable to government, stakeholder and community expectations in designing its post-2010 regulatory responses. Examples include, the provision of unrestricted research funds to support concussion medical research; support of youth concussion laws across the United States and collaboration with the United States Military by working on common platforms of concussion and head injuries, both in football and the military.

Rule changes have been made designed to fundamentally prevent, manage and to treat players who sustain concussion and head injuries during play and training. Independent neurologists have been assigned to games to add an additional layer of scrutiny to a team doctor diagnosis and return-to-play decisions. Then in 2012, the NFL announced a US\$30 million commitment to support independent studies of neurological diseases, thus representing a sign of their commitment to meet high government, stakeholder and community expectations.

4. The NFL Settlement

In July 2014, a mediated settlement of the NFL concussion litigation was approved. The large part of NFL's settlement involved an unrestricted Injury Compensation Fund to pay monetary awards to retired NFL players, which currently is approximately 21 000 eligible former players, who show symptoms of severe cognitive impairment, dementia, Alzheimer's, CTE or Amyotrophic lateral sclerosis (ALS). Factors such as age, the NFL playing seasons and other relevant medical conditions will be taken into account when assessing the amount of compensation a former player may be awarded. Determining the amount compensation for former NFL players are decided by independent doctors who in conjunction work with settlement administrators, appointed by the court.⁵²

⁴⁹ *Maxwell et al v National Football League et al*, No. BC465842 (Cal Super. Ct, 2011).[525] [526]; *Easterling et al v National Football League et al*, 2:2011cv05209, [55] (Pa ED, 2011) [47]; *Evans et al v. National Football League et al*, No. 2:12-cv-02682-AB (Pa ED, 2012) [81].

⁵⁰ *Evans et al v. National Football League et al*, No. 2:12-cv-02682-AB (Pa ED, 2012) [81].

⁵¹ Jon Campisi, 'NFL Players' Concussion Litigation - New 'Big Tobacco' - Moves Forward in Philly', Legal Newsline (online), 19 September 2012 <<http://www.legalnewsline.com/spotlight/237346-nfl-players-concussion-litigation---new-big-tobacco---moves-forward-in-philly>>.

⁵² Paul Anderson, 'Historic Settlement Reached' *The Concussion Blog* (29 August 2013) <<http://nflconcussionlitigation.com/>>.

The settlement is monumental, both in terms of quantum and significance, despite being wrapped in the usual ‘no admission of liability’ packaging and justified on a basis of the immediate needs of the claimants and the desire to avoid protracted and expensive litigation. Owing to the fact that the settlement was mediated, rather than litigated, the allegations of liability were never proven in court, on the balance of probability. Therefore, the question of whether the NFL breached its duties referred to in the NFL Litigation remains moot.

Settlement of the NFL Litigation closed one chapter on the concussion issues. This settlement goes some way towards compensating the harm caused and established a clearer future agenda for sports-related concussion. Some suggest that despite the NFL’s good intentions, these initiatives came too late, and a proactive and more transparent approach by the NFL at an earlier stage could have achieved better health outcomes for players and the public.⁵³

B *The NHL Litigation*

The class action complaint in *Leeman v National Hockey League and NHL Board of Directors* was filed in November 2013 against the National Hockey League (NHL) in the United States District Court, shortly after the NFL settlement was announced.⁵⁴ The NHL Complaint once again sharpened the focus on the role of the governing body and the delicate balance in managing contact and collision sports, player health and spectator demands.⁵⁵

The NHL Complaint portrayed the NHL as a governing body with ultimate control over the organisation, promotion and regulation of professional ice hockey. As the rule-making body, the claim alleges the NHL had unilateral control to set the rules and laws of the sport, and to define a risk framework for the hockey players to operate within. The pleadings refer to the annual income of the NHL and lucrative broadcasting and media arrangements that were in place. The aim of these pleadings were to portray the NHL, in terms of its profitability and size, to be designed to justify the assertion that the NHL held a ‘superior and unique vantage point’ and seeks to attribute responsibility on this basis as a ‘self-appointed arbiter of player safety.’⁵⁶ The claimants were retired professional ice hockey players, who had careers spanning across the 1970s, 1980s and 1990s. The original complaint involving ten players, but has increased to include over 200 retired players in six complaints.⁵⁷

The central allegation made against the NHL is that it knew or should have known of the risks to players caused by repetitive concussions and its links to later cognitive disorders and neurological diseases.⁵⁸ By claiming that additional research was required and further investigations needed, the claimants alleged that the NHL engaged in active and purposeful concealment, which failed to provide truthful and accurate information and, further, failed to take appropriate action to protect the players. Despite its role as arbiter for player safety, the claim alleges that the NHL deliberately promoted, and profited from, a culture of violence to increase spectator appeal and the value of its media and broadcasting rights within the North

⁵³ Daniel S. Goldberg, 2013. ‘Op-Ed: Public Interests & the NFL Concussion Litigation Settlement’ NFL Concussion Litigation (online), 10 September 2013 <<http://nflconcussionlitigation.com/?p=1514>>.

⁵⁴ *Leeman et al v NHL et al*, 1:13-cv-01856 (D DC, 2013) (NHL Complaint).

⁵⁵ For further details about the NHL Complaint, see Annette L. Greenhow, ‘Concussion in Court: A review of the 2013 NHL and NFL Concussion Litigation in the United States’ (2013) *The Commentator*, ANZSLA, 89,1-6.

⁵⁶ The NHL Complaint appeared on The Front Page, with the story on the NHL’s US\$4.9 billion media rights deal appearing on 5. See Sports Law Weekly, ‘Former NHL Players File Concussion Lawsuit Against League’, *Sports Lawyers Association and the Tulane Sports Law Press* (online) 25 November 2013 to 1 December 2013, <<https://www.sportslaw.org/members/secureDocument.cfm?docID=1019>>.

⁵⁷ ‘NHL Concussion Lawsuit Grows to over 200: Lawyers’ CBC Sports (online), 27 November 2013 <<http://www.cbc.ca/sports/hockey/nhl/nhl-concussion-lawsuit-grows-to-over-200-players-lawyers-1.2443059>>.

⁵⁸ NHL Complaint [15].

American market.⁵⁹ At this early stage in this litigation it remains to be seen whether the NHL will demonstrate a willingness to negotiate a settlement with the plaintiffs.

C *FIFA Complaint*

In August 2014, proceedings were filed in the United States against FIFA and a number of other sporting associations in the organisational hierarchy responsible for the management of concussion in youth soccer in the United States.⁶⁰ Two former junior soccer players and three parents have brought the complaint seeking class action certification. Unlike the NFL and NHL litigation, which involved allegations of mismanagement at the professional level, the FIFA proceedings involve claims of mismanaging concussion at the junior level and alleging FIFA had a duty to protect players at all playing levels.

The allegations include failure by the governing authorities, responsible for soccer, in the United States to take the appropriate steps to reduce concussion related injuries. The FIFA Complaint relies heavily upon the Consensus Statements issued by the Consensus in Sport Group and academic publications seeking to establish the state of the medical art and science at the relevant times.⁶¹

The FIFA Complaint alleges negligence against the governing body and organisations within the junior soccer hierarchy for failing to educate and warn players, disclose risks, promulgate rules, and concealing and misrepresenting important facts.⁶² This complaint alleges that the defendants knew or ought to have known of the dangers associated with concussion by heading the ball or attempting to head the ball.⁶³ Comparisons have been made to other sports where changes to the rules were made to minimise the risk associated with concussion.⁶⁴ The central allegation here is that the defendants failed to take the necessary steps to alter the rules and that this failure caused the injuries to the claimants.

Further, this complaint alleges a breach of a voluntary undertaking by each defendant that it assumed the role of supervisor, regulator, monitor and provider of appropriate rules to minimise the risk of injury.⁶⁵ Unlike the NFL and NHL litigation, the FIFA Complaint is not seeking monetary damages but changes to align concussion management policies to other sports. It is also seeking medical monitoring to detect the manifestation of post-injury symptoms.⁶⁶

D *A Comparative Review of the Concussion Litigation*

Irrespective of the evolving nature of scientific knowledge, the fact that the litigation was filed against the NFL, NHL and FIFA suggests that the litigation lawyers were satisfied that a case could be made in establishing a nexus between repetitive concussions and the players' complaints. Interestingly, the FIFA litigation relies heavily upon all consensus statements issued by the CISG. However, the medico legal statements in the Consensus Statements has

⁵⁹ NHL Complaint [199].

⁶⁰ *Mehr and ors v FIFA and ors* No.3:14-CV-03879 (Northern District Court of California, 2014). (*FIFA Complaint*) [15]. The proceedings have been issued against FIFA, US Soccer Federation, US Youth Soccer Association, American Youth Soccer Organisation, US Club Soccer and California Youth Soccer Association.

⁶¹ FIFA Complaint, [4] [6].

⁶² FIFA Complaint [423]-[433].

⁶³ FIFA Complaint, [7] referring to J. T. Master, A. G. H. Kessels, M. D. Lezak and T. Troost, 'A Dose-Response Relation of Headers and Concussion with Cognitive Impairment in Professional Soccer Players' (2001) 23(6) *Clinical and Experimental Neuropsychology* 770.

⁶⁴ FIFA Complaint, [11].

⁶⁵ FIFA Complaint, [434]-[444].

⁶⁶ FIFA Complaint, [445]-[451].

varied over the years; with the 1st Consensus Statement offered as ‘an analysis of concussions in sports’ and providing a ‘summary of the state of the art’ at the relevant time. Whereas the 3rd and 4th Consensus Statements provided a scope for the medico legal statement that was refined to limit the application as not intending to set a standard of care.

The following questions have been formulated in the context of the concussion litigation in the United States:

- whether the governing body knew or ought to have known that participants who sustain repetitive concussive events, sub-concussive events and/or brain injuries were at significantly greater risk for chronic neurological diseases and disabilities during their playing careers;
- whether the governing body knew or ought to have known that participants who sustained repetitive concussive events, sub-concussive events and/or brain injuries are at significantly greater risk for chronic neurological diseases and disabilities later in life;
- whether the governing body assumed a voluntary duty through the creation of its concussion management programs and policies to inform its players of the risks of concussive events, subconcussive events and/or brain injuries;
- whether the governing body actively and purposely concealed information from its players regarding the severe risks of concussive events, sub-concussive events and/or brain injuries, and whether this caused damages; and
- whether the governing body caused or contributed to Plaintiffs’ damages by:
 - historically ignoring the true risks of concussive events, sub-concussive events and/or brain injuries suffered by players;
 - failing to disclose the true risks of repetitive concussive events, sub-concussive events and/or brain injuries to players;
 - refusing to address the issue of concussive events, sub-concussive events and/or brain injuries despite a growing body of evidence establishing a link between sports and such injuries; and
 - refusing to amend its rules and procedures and equipment requirements to effectively protect its players.

The NFL settlement demonstrates that there were potential legal vulnerabilities in the NFL’s position. However, the plaintiffs were equally facing the challenges of establishing jurisdiction, causation, and the state of the science at the relevant time, and the extent to which they contributed to the harm. A further challenge was establishing the date of discovery for the purpose of suspending the statute of limitations in the relevant jurisdictions.

E *The Australian Context*

Within the Australian context, allegations such as those contained in the NFL and NHL litigation would likely constitute a novel case and would very much depend on the particular circumstances of the case. The overarching consideration is whether, at the relevant time, reasonable care was taken to protect and enhance the safety of participants in the sport. This would also require a determination of whether concussion protocols reflected the state of medical art and scientific knowledge in sports medicine at the relevant time. From a regulatory perspective, questions arise concerning the implementation and enforcement of the protocols, with appropriate and consistent sanctions being applied for non-compliance.

The law affords protection to a person whose physical integrity has been compromised, with such claims regulated by the common law and the civil liability legislation in each State and Territory.⁶⁷ Sport, including football, does not operate in a ‘law-free zone’ and is not a protected domain or immune from issues associated with harmful conduct against others.⁶⁸ Justice Kitto observed in *Rootes v Shelton*, ‘there is nothing new or mysterious about sport, being older than the common law itself.’⁶⁹ Factors such as, the nature and rules of the particular sport, the motivation for participation and the organisation of the competition are all relevant considerations.⁷⁰

There are relatively few cases in Australia involving claims for personal injuries sustained in contact or collision sport, and only a small number of cases involving claims directly against the sports administrators in failing to protect participants.⁷¹ There are no cases that examine legal responsibility of a governing body in Australia in relation to sports-related concussion and negligence involving claims for personal injuries suffered by a professional player. At the elite level of professional football, complaints associated with career-ending concussive injuries have, thus far, been determined by accessing the internal mechanisms facilitated by the governing body in accordance with the collective bargaining agreements.⁷²

1 Establishing a Duty

Drawing from the earlier cases involving allegations of negligence in a sporting context, courts appear to be strongly influenced by the values of individual responsibilities and risk choice, particularly by adult volunteers, moving away from the ‘paternalistic high-point’ reached in the early 1990s.⁷³ The threshold issue for determination is whether a duty of care is owed under either an established or a novel category.

The civil liability reforms did not codify the tort of negligence and the foundational ‘neighbour’ principle established in *Donoghue v Stevenson*⁷⁴ is relevant when considering whether a duty of care exists. An established category includes the duty owed between an employer and an employee. The Australian Taxation Office has ruled that a professional

⁶⁷ *Civil Liability Act 2003* (Qld); *Civil Liability Act 2002* (NSW); *Civil Law (Wrongs) Act 2002* (ACT); *Wrongs Act 1958* (Vic); *Civil Liability Act 2002* (Tas); *Civil Liability Act 1936* (SA); *Civil Liability Act 2002* (WA); *Personal Injuries (Liabilities and Damages) Act 2003* (NT).

⁶⁸ Justice Kirby in the minority judgment in *Woods v Multi-Sport Holdings Pty Ltd* (2002) 186 ALR 145 at [101] – [104] considered that the law does not accept that the rules in sport establish the law’s standard of reasonable care. As held by Barwick CJ in the earlier case of *Rootes v Shelton* (1967) 116 CLR 383, 385, the rules have some value but are not definitive in setting the standard of care at law. For a detailed analysis of the minority judgment. See Kylie Burns, ‘It’s Just Not Cricket: The High Court, Sport and Legislative Facts’ (2002) 10 *Torts Law Journal* 1.

⁶⁹ See *Rootes v Shelton* (1967) 116 CLR 383, 387. The High Court of Australia held that the common law of negligence applies to sporting activities and reinforced the principle that the rules of the sport may constitute one of the circumstances to be taken into account but is not definitive in determining the legal standard of care.

⁷⁰ Justice Kirby in *Woods v Multi-Sport Holdings Pty Ltd* (2002) 186 ALR 145 considered commercial elements were of importance in determining the duty of care. In *Sibley v Milutinovic* [1990] *Aust Torts Reports* 81-013, citing D. Thorpe et al, *Sports Law* (Oxford University Press, 2013) 199, 200, Miles CJ considered that both the rules of the game and the relevant law must be considered.

⁷¹ *Agar v Hyde* (2000) 201 CLR 552; *Haylen v New South Wales Rugby Union Ltd* [2002] NSWSC 114; *Green v Country Rugby Football League of NSW* [2008] NSWSC 26.

⁷² An early case in the AFL involved the retirement of Dean Kemp and compensation payment for career-ending concussive injuries in 2001. Since that time, a number of other players have been awarded compensation for concussive injuries. See Samantha Lane, ‘Head injury payouts revealed’, *The Age* (online), 1 April 2011 < www.theage.com.au/afl/afl-news/head-injury-payouts-revealed-20110331-1cngm.html >.

⁷³ The paternalistic highpoint is attributed to the decision in *Nagle v Rottnest Island Authority* (1993) 177 CLR 423. See Kylie Burns, ‘It’s Just Not Cricket: The High Court, Sport and Legislative Facts’ (2002) 10 *Torts Law Journal* 1,2.

⁷⁴ [1932] AC 562. In establishing the threshold element of whether a duty of care is owed to another, the ‘neighbour’ principle identifies that reasonable care must be taken to avoid acts or omissions which are reasonably foreseeable and would be likely to injure another.

footballer is a person who makes a living by playing football, such as rugby league, rugby union, soccer and Australian rules.⁷⁵ The court has classified such a person as an employee of a team or club pursuant to a contract of employment.⁷⁶ This recognised the nature of the contractual relationship between the team and the player, but the relationship between the governing body and a professional player has not as yet been tested.

a. Professional Athletes

In *Agar v Hyde*,⁷⁷ the injured players were recreational participants who voluntarily participated in the sport of rugby union. The High Court of Australia held that no duty of care existed in these circumstances, but left open the question of whether this case would have been differently decided in circumstances involving employment of professional players or in cases involving children.⁷⁸

The criteria for establishing a novel category of duty of care, the salient features test, was developed by the High Court of Australia in 2001, following the decision in *Agar v Hyde*. The novel test now requires a consideration of variety of factors, including the nature and foreseeability of the harm, the degree of control, proximity, vulnerability and reliance, knowledge, risk-choice and autonomy.⁷⁹ Any examination of whether a duty of care exists between a governing body and a professional player would need to be considered in light of this salient features test and careful consideration of the relevant factors, examined below.

2 Rule-Making Function

Operating within a self-regulated system, governing bodies are expected to promulgate rules to ensure sport their sport is safe. The nature and effect of these rules and the methods of self-regulation by the governing body are of vital importance to preserve the integrity of the sport. They also form the basis upon which the law tolerates, *inter alia*, assault and participant consent in combat, contact and collision sports.⁸⁰ However, this also carries responsibilities to ensure that rules reflect the current standards and modified to reflect the current practice, and enforced consistently and vigorously to achieve the objectives of providing a safe sport system.

It has been suggested that there is scope to assert that governing bodies have legal obligations based on their rule-making function.⁸¹ Whether this then translates to a legal duty in the case of sports-related concussion and whether it extends to professional players will depend on a number of factors, including the degree of legal control to enforce the rules within the particular context. The salient features test would need to be satisfied to determine if it can fall within a novel category.

⁷⁵ Australian Taxation Office 'Professional Footballers – General Tax Guide' (26 June 2014).

⁷⁶ *Adamson v West Perth Football Club Inc.* (1979) 27 ALR 475, [71].

⁷⁷ (2000) 201 CLR 552.

⁷⁸ (2000) 201 CLR 552. Hayden Opie, 'The Sports Administrator's Charter: *Agar v Hyde*' (2001) 9 *Torts Law Journal* 131, 146-149.

⁷⁹ *Sullivan v Moody* (2001) 207 CLR 562 at 579. Other features include the nature of the activity, the nature of the hazard, any potential indeterminacy of liability, the nature of consequences of action to avoid the harm, the existence of conflicting duties from other principles of law or statute and the desirability or need for conformance and coherence in the structure and fabric of the common law. See also Allsop P in *Caltex Refineries (Qld) Pty Ltd v Stavara*, [2009] NSWCA 258, [101]-[106].

⁸⁰ For a summary describing this de facto immunity in the context of boxing and the importance of a regulatory system underpinning sport involving intentional infliction of harm, see Jack Anderson, 'The Right to a Fair Fight: Sporting Lessons on Consensual Harm' (2014) 17(1) *New Criminal Law Review* 55, 70.

⁸¹ *Watson v British Boxing Board of Control* [2001] 2 WLR 1256, 1150, 1160; Hayden Opie 'The Sports Administrator's Charter: *Agar v Hyde*' (2001) 9 *Torts Law Journal* 131.

3 Degree of Control and Proximity

The degree of control and proximity between a governing body and a participant are important features when considering the existence of a duty of care. The four football codes operating at a professional level in Australia exercise varying degrees of influence and practical control over aspects of the particular sport, clubs and players.

This relationship would appear to be closer within those codes of football regulated by the national governing body. By way of illustration, the Australian Football League (AFL) is the rule-maker and principal controller in the promotion, organisation and regulation of Australian football.⁸² It is the exclusive authority to grant licenses and rights to participate in the competition and it has the power to design, implement and enforce policies, rules and promulgates the Laws of the Game. The standard player contract in the AFL is a triparted agreement between the AFL, a licensed club and a player. The significance of this contractual arrangement was tested recently in the context of enforcement of the anti-doping regime in Australia.⁸³

4 Dangerous Recreational Activities

One of the reforms introduced under the civil liability amendments included the introduction in some jurisdictions of a defence of ‘dangerous recreational activity’ (DRA). Having established the elements, a claimant might nonetheless be disentitled from succeeding in an action as a result of the DRA defence. This defence disentitles a claimant for compensation for injuries arising from the materialisation of an obvious risk of a DRA.⁸⁴

This reform is aimed at shifting risk and allocating responsibility to those who participate in DRAs.⁸⁵ Risk categorisation plays a significant role in the application of this defence and despite the statutory definitions of ‘obvious risk’ and ‘dangerous recreational activities’, the matter is far from clear.⁸⁶ The particular circumstances of the case will be relevant in determining whether the risk is characterised as an obvious risk or inherent risk.⁸⁷ In the context of professional sport and dangerous recreational activities, Wood J determined in *Dodge v Snell* that the DRA defence does not apply to those who play sport as an occupation or profession.⁸⁸

F The New Zealand Context

The taxpayer funded no-fault injury compensation system, administered by the Accident Compensation Commission (ACC) has largely replaced personal injuries litigation in New

⁸²For a detailed outline of the AFL’s activities, see Australian Football League, ‘Australian Football League Annual Report 2013’ (2013).

⁸³ The effectiveness of this arrangement was demonstrated recently when the AFL relied on its contractual powers to compel players to co-operate with anti-doping investigations by ASADA in *Essendon Football Club v Australian Sports Anti-Doping Authority* [2014] FCA 1019.

⁸⁴ This exemption applies in four states. See *Civil Liability Act 2003* (Qld) s 19; *Civil Liability Act 2002* (NSW) s 5L; *Civil Liability Act 2002* (Tas) s 20; *Civil Liability Act 2002* (WA) s 5H. There is no dangerous recreational activity exemption in Victoria.

⁸⁵ See recommendation 11 outlined in ‘the Ipp report’; David Ipp, ‘Review of the Law of Negligence – Final Report’ (September 2002) 4, [4.11]–[4.18].

⁸⁶ According to Thorpe and Stewart, the defence has only been succeeded on one occasion in the Supreme Court or Court of Appeal in New South Wales as at 2006 in the case of *Great Lakes Shire Council v Dederer & Anor*

⁸⁷ See Mason J in *Lormine Pty Ltd & Anor v Xuereb* [2006] NSWCA 200, [31].

⁸⁸ *Dodge v Snell* [2011] TASSC 19, [261]–[264], [270]. Justice Woods found support for this view by examining the meaning of ‘recreational’ and the second reading speech to Parliament.

Zealand.⁸⁹ A claimant who has suffered a personal injury is entitled to make an open access claim to the ACC at the time of seeking medical treatment from a registered health professional.

Studies published in 2008 and 2014 have provided detailed descriptive data associated with the costs of sports-related concussion, accounting for 6.3 per cent of injury entitlement costs and the highest mean cost per claim.⁹⁰ In 2014, a 10-year study between July 2001 and June 2011 identified 20,902 moderate-to-serious sports-related concussion claims. The costs, including compensation payments, associated with these claims amount to NZ\$16 546 026. The codes of rugby union and soccer had the highest number of claims.⁹¹ These statistics demonstrate the high cost of sports-related concussion and, moreover, support the framing of discussing this important issue from a public health perspective.⁹²

IV ETHICAL CONSIDERATIONS IN THE SOCIAL CONTEXT

Sports-related concussion raises numerous medical and legal issues, but is it fundamentally an ethical issue? Does a governing body have an ethical obligation as custodian or ‘guardian’ of the game vested with the responsibility to protect participants across all playing levels?⁹³ The important health benefits associated with participation link sport and society.⁹⁴ Sport is a neutral instrument itself, but societies often expect sport to produce champions and elite athletes, and to encourage mass participation for the development and health of communities.⁹⁵ Society also expects that through this process, risk-assessments be made on the continuum of benefit versus harm in the public interest. Ethical foundations and a clear understanding of the concept of ‘public interest’ should necessarily underpin risk-assessments in this context.

A *The Public Interest in Sports-related Concussion*

‘Public interest’ has been described as ‘exceptionally indeterminate and amorphous’.⁹⁶ Goldberg considers the public impact of the NFL concussion litigation extending beyond the private rights of the individual participants and their rights to seek compensation, arguing that the public interest element is justified on the basis of the social responsibility of the NFL owed to all participants in the sport of American football.⁹⁷ Sports-related concussion should be considered in a social context for a number of reasons.

⁸⁹ *Injury Prevention, Rehabilitation and Compensation Act 2001* (NZ). All claims, excluding actions for gross negligence, are made through the ACC. The scheme has almost completely removed the right of individuals to sue in negligence for personal injury that falls within the compensation scheme under s 317 (1). See CCH, *Sports Law: Personal Injuries New Zealand*, (at 75-620)..

⁹⁰ D. King, et al, ‘Rugby league injuries in New Zealand: a review of 8 years of Accident Compensation Corporation injury entitlement claims and costs’ (2009) 43(8) *British Journal of Sports Medicine* 595, 597. Sports-related concussion treatment costs were NZ\$25 347 over an eight year period in rugby league.

⁹¹ For a 10 year review of ACC sports-related concussion costs, see Doug King, et al, ‘Sports-related concussions in New Zealand: A review of 10 years of Accident Compensation Corporation moderate to severe claims and costs’ (2014) 17 *Journal of Science and Medicine in Sport* 250, 251.

⁹² Daniel S. Goldberg, ‘Mild Traumatic Brain Injury, The National Football League, and the Manufacture of Doubt: An Ethical, Legal and Historical Analysis’ (2013) 34 *Journal of Legal Medicine* 157.

⁹³ FIFA describes itself as ‘guardian of the game’. FIFA Complaint, above n 60.

⁹⁴ In addition to the physical health benefits of sport participation, recent studies found that keeping adolescents in sport is fundamental to mental health with adolescents who drop out of organised sport being 10 to 20 per cent more likely to be diagnosed with a mental health problem during the next three years than their peers who stay in organised sport. Australian first study uses sport to reduce depression and suicide rates in young men. See University of Wollongong, ‘Australian First Study uses Sport to Reduce Depression and Suicide Rates in Young’ (Media Release, 9 October 2014) <<http://medianet.com.au/releases/release-details?id=811940>>.

⁹⁵ Annette Greenhow and Jocelyn East, ‘Custodians of the Game: Ethical Considerations for Football Governing Bodies in Regulating Concussion Management’ (2014) *Neuroethics*.

⁹⁶ Freiberg, above n 36.

⁹⁷ Goldberg, above n 92.

i. *A Safe Sporting Environment and the Risky Workplace*

Across all playing levels, there is an expectation that a safe sporting environment will be provided to all participants regardless of age and ability. At the community levels, parents, carers and families allow their children to participate in sport and entrust others to provide and enforce rules that support and promote a safe sporting environment. The sustainability and future success of professional sport is said to be heavily dependent on the participation of children from a young age, with the children of today being said to be the 'stars and fans of tomorrow'.⁹⁸ Children have a right to protection and be afforded full opportunity to play which promotes their general culture and well-being.⁹⁹

At the professional level, the risk of concussion has been viewed, to some extent, as an occupational hazard when perusing the objectives of the game; a dangerous occupation, considered, by some, to be analogous with soldiers in armed conflict or police officers in carrying out their duties of law enforcement.¹⁰⁰ There are, however, significant and obvious differences existing between these categories, -not least of which is the underlying motivation for entering into the occupation in the first place and the safety net provided by a state regulated compensation regime to protect against the short-and long-term impact of work-related injuries. The occupational health and safety regulation over a field of play has been left to the non-government actors and administered largely by the governing body within the jurisdiction. Commercial considerations can become intertwined with issues involving player health and welfare.¹⁰¹

ii. *Investment, Utilisation and Allocation of Resources*

Drawing from sports management literature, the financial and non-financial investments made in sport places higher levels of expectations on those who ultimately regulate it.¹⁰² The commercialisation of sport has created a heightened expectation and duty on the governing body to maximise safety and reduce injury risk across all levels of participation. Assessed on the basis of having significant public benefit, the Australian Sports Commission directs government funding and support to national sporting organisations, and the four codes of football have been recipients for many years.¹⁰³ Chief Justice Gleeson in *Agar v Hyde* identified the public benefit of sport based on the funding of public facilities.¹⁰⁴

⁹⁸ Steve Cornelius and Paul Singh, 'Protection of Young Athletes' in James A R Nafziger and Stephen F Ross (eds), *Handbook on International Sports Law* (Edward Elgar) 294.

⁹⁹ United Nations *Universal Declaration on Human Rights* General Assembly Resolution 217A (III), U.N. Doc A/810; United Nations, *Convention on the Rights of the Child* (New York, 20 November 1989); United Nations Educational Scientific and Cultural Organisation, *International Charter of Physical Education and Sport* (Paris, November 1978).

¹⁰⁰ It is no coincidence that the NFL has partnered with the US Military to research the effects of traumatic brain injury. The International Professional Sports Concussion Research Think Tank included the US Military as part of the research collaboration. See Hackney Publications, 'A Report from the International Professional Sports Concussion Research Think Tank' on Concussion Policy and the Law (26 August 2014) <<http://concussionpolicyandthelaw.com/2014/08/26/a-report-from-the-international-professional-sports-concussion-research-think-tank>>. The comparison between NFL footballers and warriors or soldiers going into battle was made by George Orwell in 1941.

¹⁰¹ An example of how commercial considerations came to be involved in decisions associated with player health and welfare was in the 2014 Federal Court hearing in the case of *Essendon Football Club v Australian Sports Anti-Doping Agency*. Evidence from the former Chief Executive Officer was referred to the AFL relating to concerns about the impact on grand final ticket sales of the pending release of a damaging report into doping allegations against Essendon. Refer to Affidavit of Aurora Andruska

¹⁰² Emma Sherry, David Shilbury and Greg Wood, 'Wrestling with 'conflict of interest' in sport management' (2007) 7(3) *Corporate Governance* 267.

¹⁰³ Established under the *Australian Sports Commission Act 1989* (Cth), the ASC is empowered to make grants, lend money, provide scholarships or like benefits. The powers are outlined in s 8(1)(d) *Australian Sports Commission Act 1989* (Cth). Australian Sports Commission, *Annual Report 2011-2012*

As publicly funded and supported non-government organisations, the public expects that sporting organisations will allocate and responsibly utilise resources to promote policies that enhance a safe sporting system. Arguably, this includes an investment in research and education regarding issues of importance of safety in sport. When there is a commercial dimension to the organisation of sport, the expectation is that organisers will keep abreast of available expert knowledge concerning the risks to their sports.¹⁰⁵

iii. *Integrity of Sport*

Matters relevant to the integrity of sport involve fairness and equity. In addition to other matters that threaten the integrity of sport, such as doping in sport and match fixing, the fair and equitable treatment of players has ethical and social dimensions, beyond private interests. Society expects that if a player is injured, their health and welfare, both in the short and long-term be protected.¹⁰⁶ Similar to doping and match fixing, decisions regarding management of sports-related concussion should be considered within a public interest framework to reflect broader societal values such as, fairness and equity. Private and public interests are affected by these decisions and must feature as an inherent component in the entire decision-making process.

iv. *Injury Cost Burden and Public Health Issues*

The private system involved in compensating players for injuries sustained during their chosen careers does not adequately take into account the direct costs to the community by having to carry the burden of health care. Potentially, these injuries are workplace injuries and they impose costs on those not involved in the workplace bargain – the player's family and the general community, through the use of social security and/or government provided health care.

Incidence rates of concussive and sub-concussive injuries are high. So too are related health care costs to treat these injuries. According to Finch et al, there were 47,450 hospitalisations resulting from sports-related concussions over a nine-year period, costing the Victorian community around A\$20 million annually.¹⁰⁷ In addition to health care costs, there are also other costs associated with concussions and its affects on reduced or lost productivity. Although difficult to quantify and measure, the Australian Sports Commission has identified that these additional costs arise from time lost to employment, education and home activities, future sporting activities and long-term physical, psychological and/or emotional damage.¹⁰⁸ Langlois et al observed that in the United States concussion directly affects a person's ability to perform daily activities and aptly describes the injury as 'one of the most disabling injuries'.¹⁰⁹

<http://www.ausport.gov.au/about/publications/annual_reports/annual_report_2011-2012>. It is reported that A\$134 million taxpayer investment was made during the 2011/12 financial year.

¹⁰⁴ *Agar v Hyde; Agar v Worsley* (2000) 201 CLR 552 [15] (Gleeson CJ).

¹⁰⁵ Albeit in the context of determining the nature and scope of a sporting organisers duty of care in a negligence claim, the distinction is important in that it highlights fundamental differences between voluntary and commercial organised sports. See McHugh J in *Woods v Multi-Sport Holdings Pty Ltd* (2002) 186 ALR 145.

¹⁰⁶ In Canada, concussion falls under the policy domain of 'Sports Ethics' and is seen as an integrity issue, alongside doping and match fixing, and other threats to the integrity of sport.

¹⁰⁷ Caroline Finch, Angela. J. Clapperton and Paul McCrory, 'Increasing Incidence of Hospitalisation for Sport-Related Concussion in Victoria, Australia' (2013) 198(8) *Medical Journal of Australia* 427.

¹⁰⁸ 'Cost of Sports Injuries' on Clearinghouse for Sport (July 2013)

<https://secure.ausport.gov.au/clearinghouse/knowledge_base/sport_development_and>

¹⁰⁹ The percentage of injury-related productivity loss attributed to TBI was estimated to be 15.7 per cent. Jean Langlois, Wesley Rutland-Brown and Wald MM, 'The Epidemiology and Impact of Traumatic Brain Injury: A Brief Overview.' (2006) 21(5) *Journal of Head Trauma Rehabilitation* 375, 376.

B *Custodians and the Role Model Effect*

Within the Australian context, sports' governing bodies are responsible for the long-term development and sustainability of their particular sport, providing a wide range of public benefits through a self-funding business model. It is expected that a significant portion of revenue will be allocated towards enhancing, promoting and developing sport for all Australians both at the national and grassroots level.¹¹⁰

Sports' governing bodies occupy a unique position of control in the democratic process, particularly when performing the crucial function of rule-maker. It is this element of control that arguably justifies a responsibility to a broader constituency to ensure that their actions are of a sufficient standard to meet community expectations and, moreover, to evaluate the tensions that might arise in reconciling competing interests from the range of stakeholders. It is fair to think that the public has a heightened expectation that governing bodies will effectively utilise appropriate regulatory tools when faced with problems that have associated 'public interest' elements to such issues and be more permeable to external influences.¹¹¹

The 'cascade-effect' of decisions made by the governing body and how these decisions are implemented at the elite level of professional sports has a significant impact on community and grassroots sport. In 1994, the NHRMC Report identified illegal play as being a major contributor to head injuries and recognised the importance of 'example-setting' by strongly recommending that illegal conduct should be 'severely punished.'¹¹²

In identifying the distinguishing features of an elite athlete, as a unique patient with the inherent 'will to win', Murthy et al describes a professional player as a person who is driven to perform and pursue the extremes of physical capacity to compete.¹¹³ Long-term health impacts are sometimes regarded as a secondary consideration. Another dimension arises in male-dominated team sport, which is described as the 'machismo' effect—a form of societal glorification of footballers, where participation in sport sets the boundaries for masculine behaviour and hierarchy, thus relegating personal health and safety as secondary issues.¹¹⁴ When suffering injury such as, a concussion, a player will face the pressure and the desire to return to the game as soon as possible. This is exactly where the ethical dilemma arises and where the strength of the concussion management policies and the resolve of the governing body will be tested.¹¹⁵

¹¹⁰ Coalition of Major Participation and Professional Sports. Submission No 9 to Senate Rural and Regional Affairs and Transport Reference Committee, Parliament of Australia, *Practice of Sports Science in Australia*, July 2013.

¹¹¹ An example of this can be found in NHMRC Report where the power of the sports governing body to penalize illegal behaviour would reflect the severity and seriousness of concussion. NHMRC Guidelines, above n 14.

¹¹² NHMRC Report 1994, above n 14, 5.

¹¹³ Anjali M. Murthy, James Dwyer and Joseph A Bosco, 'Ethics in Sports Medicine' (2012) 70(1) *Bulletin of New York University Hospital for Joint Diseases* 56.

¹¹⁴ Alexander Hecht, 'Legal and Ethical Aspects of Sports-related Concussion: Merrill Hoge Story' (2002) 12 *Seton Hall Journal of Sport Law* 17.

¹¹⁵ Rita Panahi, 'AFL Players are Cheating Concussion Tests to Stay on the Field, Players' Association Fears', *Herald Sun* (online), 19 September 2014 <<http://www.heraldsun.com.au/sport/afl/afl-players-are-cheating-concussion-tests-to-stay-on-the-field-players-association-fears/story-fni5f22o-1227064476818>>.

V. AN INTERDISCIPLINARY APPROACH

In reviewing the literature, it is clear that sports-related concussion involves a medical, legal, regulatory, social and ethical perspective. Consequently, the subject matter does not ‘fall neatly within disciplinary lines’ nor does it belong to ‘one disciplinary family’. Scholars have suggested that this interdisciplinary aspect justifies a collaborative approach to the management of concussion issues within sport. In addition to broadening the disciplinary base, a collaborative approach across sports could also lead to efficiencies and benefits in terms of resource allocation, consolidation and sharing of knowledge, consistent research objectives and co-ordinated education programs. Accepting that distinctive rules and laws exist across contact and collision sports, there are many areas where interdisciplinary collaboration can deliver benefits to all constituencies. Rather than each sport independently ‘running its own race’ [*sic*], a harmonised, collaborative approach to the implementation and execution of consistent concussion policies, including management, research and education at all playing levels, will help shape the future concussion agenda.¹¹⁶

A *Interdisciplinary Considerations*

Interdisciplinary research involves relating, integrating and relocating disciplinary thinking to arrive at a mutually determined research problem that represents new ways of conceptualising phenomena. In other words, ‘by examining phenomena from different angles, it is possible to close the ‘research-practice’ gap with knowledge derived from multiple perspectives.’¹¹⁷

Over recent years, governing bodies have had to deal with issues that have actual or potential impacts on a player’s health and welfare. Doping in sport is one obvious issue that is described as a ‘multi-layered mosaic’ understood by drawing on a wide range of sports-related discourses.¹¹⁸ An interdisciplinary approach would require involved parties from different disciplines working together to generate a novel blend of insights and creative solutions. Within a sporting context, with the inextricable connection between sport and society, the benefit of an interdisciplinary approach would assist in recognising the varying set of relationships and entanglements that guide social life.¹¹⁹

This approach could equally be applied to the design of a ‘Sports-related Concussion Roundtable’ by drawing from the unique perspectives of the range of relevant disciplines, but seeking to fuse or integrate ideas in an effort to manage the public and private interests associated with sports-related concussion. At present, the ‘seats at the table’ have primarily been occupied by medical and scientific experts in seeking to determine the extent of epidemiological certainty associated with sports-related concussion. Due to the interdisciplinary nature of sports-related concussion, increasing a few more seats to this ‘roundtable’ may lead to alternative interpretations of findings and solutions that will transcend a single discipline and contribute greatly to sustainable outcomes for a broader range of stakeholders.

¹¹⁶ See Annette Greenhow, ‘Concussion Policies of the National Football League: Revisiting the ‘Sport Administrator’s Charter’ and the Role of Australian Football League and National Rugby League in Concussion Management’ (2011) (13) *Bond Sports Law eJournal* 1, 17 <<http://epublications.bond.edu.au/slej/13>>.

¹¹⁷ Alison Doherty, ‘“It Takes a Village:” Interdisciplinary Research for Sport Management’ (2012) 26 *Journal of Sport Management* 1, 4. The ‘village’ in this context is the diverse and rich research perspectives drawing from a range of disciplines

¹¹⁸ Jack Anderson, ‘Doping, Sport and the Law: Time for Repeal of Prohibition?’ (2013) 9(2) *International Journal of Law in Context* 26.

¹¹⁹ Doherty refers to research by Choi and Pak who describe the approach as analogous to a cooking pot, where individual ingredients are combined and the dish takes a new form when the borders of disciplinary knowledge methods and analyses blur as integrated ideas and perspectives ‘simmer’.

VI. CONCLUSION

Until recent times, there has been little collaboration across the four codes of football in the way they have approached concussion management within their sports.¹²⁰ Each respective football code has responded in different ways, at different times, and subject to their organisational structures in making rule changes and strategies for the enforcement and compliance of concussion policies. The NHRMC recommendations suggested a coordinated and consistent approach across the codes on matters pertaining to concussion management, prevention, research and education.¹²¹ Opportunities for cross-sport collaboration were identified, particularly in the area of data collection and research funding initiatives, but much remains to be done in these areas.

There are many dimensions to sports-related concussion and it remains an important and complex issue. Medical, legal and ethical issues arise, regardless of the different sports and different jurisdictions. These perspectives can inform the discussion and contribute in the formation and application of approaches to the problem. The governing body can drive the concussion agenda and integrate mechanisms to ensure it remains permeable to external influences and meets expectations of making their respective sport safer for all participants. The quest for scientific certainty appears to have been the platform upon which decision-makers have relied upon and perhaps a reason for postponed or delayed measures in reducing the risk of harm from occurring in these contact and collision sports. Without disputing the importance of the medical dimensions to sports-related concussion as being significant considerations, other perspectives are important.

Despite jurisdictional differences, the United States concussion litigation presents as a valuable case study of both private and public expectations, and what is expected of the role of a governing body as custodian or guardian. Upon reflection, the Congressional Hearing appeared to be the cornerstone of the NFL's reconfigured response, and demonstrated that the power of public scrutiny still remains an important driver of change. The nature of the legal duties alleged to have been breached by the NFL suggests that it was impermeable to external considerations and highlighted inadequacies in concussion management, prevention, research and education. When sports-related concussion is framed in a wider social context, Goldberg's approach of social responsibility is equally applicable in the Australian sports setting. It is this dimension that is worth considering further in the future design of the sports-related concussion agendas in Australia.¹²²

¹²⁰ The first Concussion in Sport conference was held in March 2013 where the four codes of football presented on their approaches to concussion management. Recently, the NFL invited the codes to attend a 'thinktank' on concussion management.

¹²¹ See NHMRC Guidelines, above n 14.

¹²² Goldberg, above n 92.